

DOCUMENT RESUME

ED 043 700

UD 010 644

AUTHOR Dunn, James A.  
TITLE The Development of Procedures for the Individualization of Educational Programs.  
PUB DATE Sep 70  
NOTE 17p.; Paper presented at the Annual Convention of the American Psychological Association, Miami Beach, Fla., September 5, 1970  
  
EDRS PRICE EDRS Price MF-\$0.25 HC Not Available from EDRS.  
DESCRIPTORS \*Computer Assisted Instruction, Elementary Grades, Individual Differences, \*Individualized Instruction, \*Program Development, Programed Materials, Secondary Grades, \*Ungraded Curriculum  
IDENTIFIERS Project PLAN, Project Program Learning in Accordance with Needs

ABSTRACT

Project PLAN (Program for Learning in Accordance with Needs) is an ungraded, computer supported, learner oriented, individualized program of education for elementary and secondary levels. This paper reviews and describes the development and improvement of the individualization procedures over a period of four years of operation of the program. Data and sample sheets are included. [Not available in hard copy because of the size of the print of the original document.] (DM)

5  
ED0 43700

The Development of Procedures for the  
Individualization of Educational Programs

James A. Dunn

American Institutes for Research

UD010644  
U.S. DEPARTMENT OF HEALTH, EDUCATION  
& WELFARE  
OFFICE OF EDUCATION  
THIS DOCUMENT HAS BEEN REPRODUCED  
EXACTLY AS RECEIVED FROM THE PERSON OR  
ORGANIZATION ORIGINATING IT. POINTS OF  
VIEW OR OPINIONS STATED DO NOT NECESSA-  
RILY REPRESENT OFFICIAL OFFICE OF EDU-  
CATION POSITION OR POLICY

Presented at the American Psychological Association Convention  
Miami Beach, Florida; September 5, 1970

## The Development of Procedures for the Individualization of Educational Programs

Project PLAN is an attempt to develop an educational system which will more fully meet the needs of today's youth. More specifically, PLAN is an ungraded, computer supported, individualized program of education. PLAN is learner oriented. Content, rate, and instructional materials are tailored to the individual student. Performance requirements are criterion referenced and success focused. Tests and materials were developed to an 80-80 target, i.e., 80% content mastery by 80% of the students, on first completion of the material. The acronym, PLAN, stands for Program for Learning in Accordance with Needs. As the name of the project implies, the student's program of studies is the heart of the system. The purpose of this paper is to review the development of the PLAN procedures for individualizing these programs.

During the first year of PLAN operation in the schools, because of the modest scope of instructional materials available (PLAN had been in operation as a project only six months when school opened and only grades 1, 5 and 9 were involved at that time), student planning was perforce quite simple. The POS was, in essence, linear. That is, once a student was placed in a particular reading program or course, all students in that course, assuming no teacher intervention, were generally required to take the same instructional materials in the same order. It was the teachers' responsibility to ensure a satisfactory rate of student progress through the materials. The only POS related service offered through the computer at that time was test scoring and, upon satisfactory student completion of a lesson, the assignment of the next lesson in the sequence.

During the second year of PLAN somewhat more flexibility in curricular assignment and somewhat better control over content pacing was achieved. During this period the student and his teacher jointly planned what lessons the student would take, the order in which they would be taken, and the number to be taken. Teacher-pupil planning of this type took place as soon as possible after school started and was repeated quarterly throughout the school year. Of course, whenever a pupil, or his teacher, thought he was

falling behind in his commitment, they could, and frequently did, enter into renewed planning to arrive at revised agreements that were more realistic and thus, more psychologically binding. A sample of the form used by the teacher and the pupil in their planning is given in Figure 1.

This procedure was considerably more effective in individualizing students' studies than the earlier linear procedure, but it was far from what was originally envisioned for PLAN. It is clearly unrealistic to expect the teacher at the beginning of the year to be intimately knowledgeable about all of the children in her class, their interests and abilities, their general approaches to learning, their long range goals and aspirations, and the like.

During the third year of operation we were ready for transition to a more comprehensive system. We had nine levels of instructional materials to draw from, we had fairly extensive testing procedures to use, and we had histories on prior PLAN performance for two-thirds of our students. At this point we were ready to begin testing procedures wherein the power of the computer might be used to generate tentative, or recommended, student programs of study. The general rationale and characteristics of this procedure were reported in some detail at APA last year.<sup>1</sup> Samples of these early data suggested POS's are given in Figure 2.

This year, for the first time, all 12 grade levels will be represented in PLAN. To operate an individualized system such as PLAN, one must have a relatively large number of lessons which are discretely, and behaviorally, defined. And each of these must have their own assessment procedures. In PLAN we have approximately 2,500 teaching-learning units representing 1200 instructional units or modules. Each module has its own criterion test which is taken immediately upon completion of the module and which must be mastered before the student proceeds to the next module.

One also needs considerable information about students, their interests, abilities, achievements, and aspirations. This Spring a two-day battery of tests was administered to every student. This testing included PLAN

---

<sup>1</sup> James A. Dunn, The Accommodation of Individual Differences in the Development of Personal Programs of Study. Presented at the 1969 APA Convention.

Achievement Tests for each of the subject matter areas studied by the student and a Developed Abilities Performance test (patterned after the Project TALENT tests which measured such developed abilities as vocabulary, reading comprehension, arithmetical reasoning, and the like). Information on student interests was also collected at that time. In addition we also have the student's previous academic history, which has been accumulated via module tests throughout the student's tenure in PLAN.

Finally, one needs a set of decision rules, i.e. specifications and guidelines, by which the information about students and materials can be interconnected to produce meaningful programs of study. This year's specifications for POS consist of over 200 pages of detailed instructions, charts, and diagrams; plus an additional 400 pages of detailed tables and module coding information describing the characteristics of the 1200 modules in the PLAN repertoire.

Currently, a PLAN student's program of studies (POS) is developed in the following manner. First, state and local school system requirements are considered and a check of the student's academic history is made to see if he has met those requirements. Then his history is reviewed to ascertain that he has completed the essential elements of the previous year's work; that is, a check is made to see if he has the necessary academic foundations to pursue the work that will be expected of him in the coming year. Next, the child's achievement test results are considered to see if there is anything from last year's material that needs to be reviewed and what, if anything, from the coming year's work he may already know. These procedures define what might be described as the core content of the student's future POS.

These core requirements are then projected across the time remaining for the student to study that particular area. In the early primary grades, for example, reading programs generally are of three years' duration. Thus, an entering second grader should normally work to finish his basic reading instruction in the next two years. It is not essential that he do so; it is simply a more or less reasonable target. A high school student entering as a sophomore would have three years to continue his mathematics studies; unless of course, he indicated he planned to take mathematics a fewer

number of years.

After the basic, or core requirements are identified and distributed across the balance of the time expected to be devoted to the study of that content, attention is then turned to determining how much of the requisite material should be taken in the immediately ensuing year. If  $n$  is the number of years remaining to study in an area, then the student is assigned at least  $1/n$  of the required modules. Typically the core requirements constitute much less than a year's worth of study, so attention must shift to the assignment of modules to augment these basic core modules. To do this, consideration must be given to determining what is a reasonable amount of work for the student to cover in a year.

This is determined by taking into consideration both the student's level of developed abilities, as determined by a battery of tests administered in the Spring, and also the number of modules the student completed the preceding year.

In the event that a student's quota is not filled by the  $1/n$  requirement (an almost guaranteed condition), the POS then begins to assign lessons that are considered highly desirable for the student to take. These are lessons not considered to be absolutely essential for further academic progress but which are nevertheless considered to be very important, basic, content for the student to learn.

If upon completion of assignment of these highly desirable lessons the student's quota for the year is still not filled, the remainder of the quota is divided evenly between lessons expected to appeal to the special interests of the student and to the assignment of required modules. from the next higher level. Assignment of modules of this latter type permits some measure of student acceleration without sacrificing curriculum enrichment.

After these lessons, or modules, have been selected, attention is then directed toward making recommendations as to which particular instructional materials (Teaching-Learning Units) the student should use in the study of his lessons. The primary factors considered in these recommendations are reading difficulty level and amount of social involvement required.

Samples of this year's elementary school POS's may be found in Figures 3 through 8.

In the case of secondary school students, the process is somewhat more complicated due to the fact that the student's long range educational and vocational goals must also be considered. Twelve long range goal clusters, or families, which have been identified empirically from Project TALENT data are being used in PLAN. An attempt is made to keep student-parent planning focused on these general goal clusters rather than on specific occupations. This allows us to keep as flexible as possible in planning for students.

From what is known from TALENT, and other sources, about job mobility and the generally poor quality of current student vocational and educational planning, PLAN has adopted the philosophy that as many reasonable options as possible should be kept open to the student for as long as possible.

The POS is developed to consider not only the long range goal expressed by the student and/or his parents, but also a second "goal" which is the result of the best professional judgment that can be made, given the data available for the student. Thus, at the secondary level, the student's program of studies aims at providing the student with preparation for at least two major long range goal areas. This is felt to be a very important characteristic of the secondary level program of studies. Its importance is reflected in data obtained in PLAN last year.

Nearly 2000 PLAN students, and their parents were asked to carefully consider their long range educational and vocational plans in order that we might accommodate them in their suggested programs of study. 82% indicated vocational goals that required a college education, but only 28% indicated that they had plans to, or expected to, attend college. (See Table 1.) Had educational planning been carried out, as is usually the case, on the expressed college-non college expectation of the student (and presumably his parents), a large number of families and students would no doubt have been very disappointed at some future point in time.

Similarly, when the expressed vocational goals of students were compared to the vocational categories for which they had the ability, it

became quite apparent that large numbers of parents and students were selecting long range vocational goals well below their ability levels. (See Tables 1 and 2.)

This year PLAN includes a rather extensive set of guidance materials aimed at helping students and their parents become much more realistic in long range goal formulation and planning.

In summary then, the major components new this year are: 1) greater flexibility in the sequencing of modules; 2) procedures for reviewing "essential" academic content that the student had once mastered but had apparently forgotten; 3) procedures whereby students might obtain "credit" for content which test scores indicated they already knew but which they had not formally studied in PLAN; and 4) procedures whereby students and parents engage in a series of relatively intensive exercises aimed at helping them arrive at relatively realistic longrange educational and vocational goals. This latter set of procedures provided for students to become much more knowledgeable about the world of work, the world of higher education, about their own interests and developed abilities, and lastly about the skills and abilities required of various types of long range goals.

As one would expect, PLAN POS's will vary considerably in type and amount of content covered, and in the rate and sequence in which that content is covered.

With this approach the concept of a curriculum tends to become meaningless. Obviously, from an operational point of view, there are as many different curricula as there are discrete programs of study. The unit of instruction becomes the individual rather than the class, and the unit of credit may be defined in terms of content mastery rather than content exposure (e.g., the Carnegie Unit or the semester hour).

Finally, with regard to some simple operating characteristics, student programs of study are run on an IBM Model 50 computer. Over 140,000 units of core storage are required just to store curriculum information about the 1200 instructional modules in the PLAN system. The remaining 8,000 units

of storage are required for processing. The processing time for each elementary student's POS (one in each of four subject matter areas: math, science, language arts, and social studies) is approximately 10 seconds. While this seems like a very brief time, and indeed is very economical, 10 seconds of continuous computer processing on a machine such as the 360-50 represents an extremely large number of decisions for each student.

In conclusion it should be indicated that, regardless of the nature and degree of planning that has gone on, the teacher is the final authority in the classroom. The teacher uses the recommended POS as he or she sees fit. She may implement the program of study in its entirety; she may make minor revisions to it; she may make major revisions to it; or she may even ignore it completely and develop an alternative program of studies for the student. Whatever her final course of action, she at least will have had the best counsel we could offer.

TABLE 1

Student-Parent  
Educational Goal

		Student-Parent Long Range Goal Category		
		College	Non-College	Total
Student-Parent Educational Goal	College	538 28%	121 6%	659 34%
	Non-College	1035 54%	221 12%	1256 66%
	Total	1573 82%	342 18%	1915

$$\chi^2 = 12 \text{ with 1 d.f.}$$

TABLE 2

Data Suggested  
LRG Category

		Student-Parent Long Range Goal Category		
		College	Non-College	Total
Data Suggested LRG Category	College	681 50%	22 16%	903 66%
	Non-College	278 20%	184 13%	462 33%
	Total	959 70%	406 29%	1365

$$\chi^2 = 33.25 \text{ with 1 d.f. } p < .001$$

Student Name John Doe Subject Area World History Contract Date September 9, 1968

### To the Student

This contract is a tentative agreement between you and one of your PLAN teachers. Its purpose is to help you, your parents, your teacher, and your counselor agree upon plans and decisions made for your future work in one PLAN class. If you complete this contract and have helped plan it, you will have demonstrated at least minimum mastery of this subject if you do the following:

1. Complete the modules listed in your Program of Studies during the time period planned;
2. Meet the check-points listed in your Individualized Schedule in order to complete your Program of Studies successfully.
3. Meet any additional performance requirements listed on the back of this page; and
4. Score at satisfactory levels on any Survey Tests you take during the time period planned.

The information on the back of this page should tell what decisions you have made about the goals you want to achieve soon in Project PLAN. These goals will help you manage your learning activities in this class. Therefore, make sure that you give as complete information as you can. Complete information is also needed for computer processing. When you and your teacher have completed your contract, get the necessary signatures below. Decide with your teacher whether or not your parents' signature is necessary.

Make sure that you have one copy of a signed contract for each of your PLAN classes. Your teachers might want to keep a copy of every contract.

By November 15, 1968, I plan to have 5 modules completed in this subject area. The number will equal about one-quarter of my year's work.

I agree that this is a tentative contract. My teacher and I may have to revise it if my work during the next few weeks shows that my Program of Studies, Individualized Schedule, or other requirements are impossible to achieve. If I find that I am making much more progress than we expected, I shall tell my teacher so that we can decide upon more challenging goals and plan a more reasonable schedule.

Mrs. S. Jones  
(Teacher's signature)

Mrs. Michael Doe  
(Parent's signature) (Optional)

John Doe  
(your signature)

\_\_\_\_\_  
(Other required signatures)

I understand that in order to demonstrate minimum mastery of this subject I will need to do the following:

1. Complete the modules below with either a "Complete," a "Student Review," or a "Teacher Certify" result by this date: November 15, 1968  
(Contract completion date)

### PROGRAM OF STUDIES

Fill in the numbers of the modules you plan to complete.

Module number
1. <u>43-641</u>
2. <u>43-642</u>

Module number
3. <u>43-643</u>
4. <u>43-644</u>

Module number
5. <u>43-649</u>
6. _____

2. meet this INDIVIDUALIZED SCHEDULE of checkpoints of my progress. If you chose to have checkpoints after completing each module, or after a group of modules, or after each step, etc., write this specific information below. If you have selected checkpoint dates, write these here also. Make sure you describe completely the kind of schedule you and your teacher chose.


Schedule of checkpoints: Checkpoints after each module on the following dates 9/20/68, 10/4/68, 10/18/68, 11/1/68, and 11/15/68

Person(s) with whom I shall check: Teacher

3. meet these other requirements: no other requirements

4. score at satisfactory levels on any Survey Tests I take in this subject during this time period.

FIGURE 2

		PROGRAM OF STUDIES AND STUDENT PROGRESS REPORT FOR GILES JOHN	
000148-02-0 SCHOOL ADDISON		TEACHER MRS. ETHEL PARKER	SUBJECT AREA LANGUAGE ARTS DATE 01/10/69
COMPLETION CODE	MODULE NUMBER	MODULE NAME	DATE FINISHED
	00-101-0	ABOUT MYSELF	
	00-000-0	SULLIVAN BOOK 10 (B)	
	00-001-1	SULLIVAN BOOK 10 (A)	
	00-002-2	SULLIVAN BOOK 10 (C)	
	00-003-3	SULLIVAN BOOK 10 (A)	
	00-004-4	SULLIVAN BOOK 10 (C)	
	00-107-7	DRAMATICS	
	00-108-8	WINDY, RAINY, AND SUNNY DAYS	
	00-109-9	STORY WRITING	
	00-110-0	A VISIT ON PAPER	
	00-111-1	BEARS ON HEMLOCK MOUNTAIN	
	00-112-2	ANIMAL STORIES	
	00-113-3	AND TO THINK THAT I SAW IT ON MULBERRY STREET	
	00-114-4	THANK YOU, MR. BELL	
	00-115-5	PEGASUS	
	00-116-6	SUBJECT, PREDICATES, AND NOUNS	
	00-117-7	THUNDER	
	00-118-8	THE KNIGHT	
	00-119-9	THE SAD TIGER	
	00-120-0	PROPER NOUNS, COMMON NOUNS, AND DETERMINERS	
	00-121-1	SUSY'S FEARS	
	00-122-2	SMILES FARM	
	00-123-3	THE ROUNDABOUTS SECRET	
	00-124-4	PRONOUNS AND SUBJECTS	
	00-125-5	BUGABOO	



		PROGRAM OF STUDIES AND STUDENT PROGRESS REPORT FOR HOFFE THOMAS	
000012-02-0 SCHOOL ADDISON		TEACHER MRS. ETHEL PARKER	SUBJECT AREA MATHEMATICS DATE 11/10/69
COMPLETION CODE	MODULE NUMBER	MODULE NAME	DATE FINISHED
	00-000-0	MATHEMATICS ACHIEVEMENT TEST	
	00-001-1	MATHEMATICS ACHIEVEMENT TEST	
	00-101-0	SETS	
	00-102-0	COMBINATIONS THROUGH 10	
	00-103-0	ADDITION COMBINATIONS THROUGH EIGHTEEN	
	00-104-0	COMBINATIONS THROUGH EIGHTEEN	
	00-105-0	ADDITION AND SUBTRACTION	
	00-106-0	PLACE VALUE	
	00-107-0	ADDITION REGROUPING	
	00-108-0	SUBTRACTION REGROUPING	
	00-109-0	MULTIPLICATION	
	00-110-0	ODD AND EVEN	
	00-111-0	FRACTIONS	
	00-112-0	LINEAR MEASURE	

FIGURE 3

PLAN		PROGRAM OF STUDIES		1824 GONZALEZ MARIA	
003 IMMACULATE HEART		LEVEL 2 LANGUAGE ARTS		FALL 1970	
COURSE EVAL	MODULE NUMBER	MODULE NAME	NO OF HOURS	DATE START	DATE FINISH
		YOUR TEST RESULTS SHOW THAT YOU SHOULD REVIEW THE OBJECTIVES OF THESE MODULES WHICH YOU COMPLETED LAST YEAR. DO NOT SUBMIT PAGE OR TEST CARDS FOR THEM.			
	10-030-3	ALPHABET 1			
	10-031-3	ALPHABET 2			
	11-036-3	SULLIVAN BOOK 81A)			
	11-037-3	SULLIVAN BOOK 31B)			
	11-039-3	SULLIVAN BOOK 41B)			
	11-060-3	SULLIVAN BOOK 51A)			
	11-061-3	SULLIVAN BOOK 51B)			
	11-062-3	SULLIVAN BOOK 61A)			
	11-063-3	SULLIVAN BOOK 61B)			
	11-064-3	SULLIVAN BOOK 71A)			
		THE FOLLOWING MODULES ARE SUGGESTED FOR YOUR PROGRAM OF STUDIES FOR THIS YEAR.			
	10-032-3	POLK TALES			
	10-033-3	ANIMAL STORIES			
	10-034-3	PUN WITH LANGUAGE			
	11-038-3	SULLIVAN BOOK 41A)			
	10-035-3	TOPSY-TURVY ANIMALS			
	11-065-3	SULLIVAN BOOK 71B)			
	10-101-3	ABOUT MYSELF			
	12-031-3	SULLIVAN BOOK 81A)			
	12-032-3	SULLIVAN BOOK 81B)			
	10-102-3	MY FRIENDS			
	12-033-3	SULLIVAN BOOK 91A)			
	10-103-3	PICTURES WITH WORDS			
	12-034-3	SULLIVAN BOOK 91B)			
	01-100	PLAN ACHIEVEMENT TEST			
	10-104-3	JINGLES AND RHYMES			
	12-035-3	SULLIVAN BOOK 101A)			
COURSE EVAL	MODULE NUMBER	MODULE NAME	NO OF HOURS	DATE START	DATE FINISH
	10-103-3	THE 300 HATS OF BARTHOLOMEW CUBBINS			
	12-036-3	SULLIVAN BOOK 101B)			
	10-106-3	STORY TELLING			
	01-104	PLAN ACHIEVEMENT TEST			
	12-037-3	SULLIVAN BOOK 111A)			
	10-107-3	DRAMATICS			
	12-038-3	SULLIVAN BOOK 111B)			
	01-101	PLAN ACHIEVEMENT TEST			
	12-039-3	SULLIVAN BOOK 121A)			
	12-060-3	SULLIVAN BOOK 121B)			
	10-110-3	A VISIT ON PAPER			
	12-061-3	SULLIVAN BOOK 131A)			
	12-062-3	SULLIVAN BOOK 131B)			
	12-063-3	SULLIVAN BOOK 141A)			
	12-064-3	SULLIVAN BOOK 141B)			
	01-102	PLAN ACHIEVEMENT TEST			
	10-114-3	THANK YOU, MR. BELL			

FIGURE 4

PLAN		PROGRAM OF STUDIES		1974 GONZALES MARIA	
009 IMMACULATE HEART		LEVEL 8 MATHEMATICS		FALL 1970	
COMPLETION DATE	MODULE NUMBER	MODULE NAME	NO OF TIMES TESTED	DATE STARTED	DATE FINISHED
		YOUR TEST RESULTS SUGGEST THAT YOU KNOW SOME OF THE OBJECTIVES OF THESE MODULES IN YOUR PROGRAM OF STUDIES. AFTER REVIEWING EACH MODULE CAREFULLY, CONSIDER CHALLENGING IT.			
	20-059-3	INTRODUCTION TO SUBTRACTION			
	20-060-3	SUBTRACTION OF 1-DIGIT NUMBERS FROM 1-DIGIT NUMBERS			
	20-061-3	INTRODUCTION TO NUMBER SENTENCES			
	20-102-3	COMBINATIONS THROUGH 10			
	20-103-3	ADDITION COMBINATIONS THROUGH 10			
	20-104-3	SUBTRACTION COMBINATIONS THROUGH 10			
	20-105-3	ADDITION AND SUBTRACTION OF TWO-DIGIT NUMBERS			
		THE FOLLOWING MODULES ARE SUGGESTED FOR YOUR PROGRAM OF STUDIES FOR THIS YEAR.			
	20-059-3	INTRODUCTION TO SUBTRACTION			
	20-060-3	SUBTRACTION OF 1-DIGIT NUMBERS FROM 1-DIGIT NUMBERS			
	20-061-3	INTRODUCTION TO NUMBER SENTENCES			
	20-101-3	MATHEMATICAL SENTENCES			
	20-102-3	COMBINATIONS THROUGH 10			
	20-103-3	ADDITION COMBINATIONS THROUGH 10			
	20-111-3	MONEY 2			
	20-112-3	SUBTRACTION COMBINATIONS THROUGH 10			
	20-104-3	PLAN ACHIEVEMENT TEST			
	20-108-3	ADDITION AND SUBTRACTION OF TWO-DIGIT NUMBERS			
	20-118-3	LINEAR MEASURE 2			
	20-109-3	PLACE VALUE TO THREE DIGITS			
	20-107-1	ADDITION WITH REGROUPING			
	20-108-3	SUBTRACTION WITH REGROUPING			
	20-114-3	TIME 2			
	22-101	PLAN ACHIEVEMENT TEST			
	20-110-3	INTRODUCTION TO MULTIPLICATION			
	22-112-3	INTRODUCTION TO FRACTIONS			
SET 27-021	22-102	PLAN ACHIEVEMENT TEST			
	20-109-3	ODD AND EVEN			
		TAKE ANY 1 OF THE FOLLOWING 3 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 27-022.			
	20-118-3	ADDITION WITH THREE ADDENDS			
	20-116-3	ADD AND SUBTRACT 4-DIGIT NUMBERS WITHOUT REGROUPING			
	20-152-3	BASIC ADDITION AND SUBTRACTION			
	20-153-3	PLACE VALUE TO FOUR DIGITS AND EXPANDED NOTATION			



PROGRAM OF STUDIES

1984 GONZALES MARTA

008 IMMACULATE HEART

LEVEL 2 SOCIAL STUDIES FALL 1970

SECTION NUMBER	MODULE NUMBER	MODULE NAME	NO OF WEEKS	DATE STARTED	DATE FINISHED
		YOUR TEST RESULTS SUGGEST THAT YOU KNOW SOME OF THE OBJECTIVES OF THESE MODULES IN YOUR PROGRAM OF STUDIES. AFTER REVIEWING EACH MODULE CAREFULLY, CONSIDER CHALLENGING IT.			
	40-120-3	CONSTRUCTING BUILDINGS			
	40-116-3	WHERE WE GET OUR FOOD			
	40-117-3	HOW WE USE OUR FOOD			
	40-118-3	WHERE WE GET OUR CLOTH			
		THE FOLLOWING MODULES ARE SUGGESTED FOR YOUR PROGRAM OF STUDIES FOR THIS YEAR.			
SET	47-008	NEIGHBORHOOD BUILDINGS			
		TAKE ANY 1 OF THE FOLLOWING 2 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-008.			
	40-120-3	CONSTRUCTING BUILDINGS			
	40-121-3	FACTORIES IN THE NEIGHBORHOOD			
SET	47-009	NEIGHBORHOOD TYPES			
		TAKE ANY 2 OF THE FOLLOWING 4 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-009.			
	40-102-3	SMALL-TOWN NEIGHBORHOODS			
	40-103-3	BIG-CITY NEIGHBORHOODS			
	40-104-3	SUBURBAN NEIGHBORHOODS			
	40-105-3	PARK NEIGHBORHOODS			

SECTION NUMBER	MODULE NUMBER	MODULE NAME	NO OF WEEKS	DATE STARTED	DATE FINISHED
SET	47-004	NEIGHBORHOOD INSTITUTIONS			
		TAKE ANY 2 OF THE FOLLOWING 3 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-004.			
	40-107-3	STORES IN THE NEIGHBORHOOD			
	40-108-3	GOVERNMENT IN THE NEIGHBORHOOD			
	40-110-3	SCHOOLS IN THE NEIGHBORHOOD			
	84-100	PLAN ACHIEVEMENT TEST			
SET	47-005	COMMUNICATION			
		TAKE ANY 2 OF THE FOLLOWING 3 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-005.			
	40-111-3	COMMUNICATION			
	40-112-3	MASS MEDIA			
	40-113-3	TV PROGRAM			
SET	47-006	BASIC NEEDS			
		TAKE ALL 3 OF THE FOLLOWING 3 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-006.			
	40-116-3	WHERE WE GET OUR FOOD			
	40-117-3	HOW WE USE OUR FOOD			
	40-118-3	WHERE WE GET OUR CLOTH			
	84-101	PLAN ACHIEVEMENT TEST			
	40-123-3	GETTING THERE FROM HERE			

SECTION NUMBER	MODULE NUMBER	MODULE NAME	NO OF WEEKS	DATE STARTED	DATE FINISHED
SET	47-007	NEIGHBORHOOD CHARACTERISTICS			
		TAKE ANY 1 OF THE FOLLOWING 3 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-007.			
	40-109-3	HOW NEIGHBORHOODS CHANGE			
	40-119-3	PEOPLE IN THE NEIGHBORHOOD			
	40-124-3	HOW NEIGHBORHOODS SOLVE PROBLEMS			
	40-151-3	WHAT IS A COMMUNITY?			
	40-152-3	MY OWN COMMUNITY AND ITS RESOURCES			
	40-153-3	A LOOK AT OTHER COMMUNITIES			
	40-177-3	MAP STUDY--REGIONS OF THE WORLD			
	40-178-3	MAP STUDY--LAND AND WATER			

FIGURE 6


		PROGRAM OF STUDIES		0917 LADUCA GINA	
003 IMMACULATE HEART		LEVEL 4 MATHEMATICS		FALL 1970	
LOCATION CODE	MODULE NUMBER	MODULE NAME	NO OF PERIODS	DAY	DATE
		YOUR TEST RESULTS SHOW THAT YOU SHOULD REVIEW THE OBJECTIVES OF THESE MODULES WHICH YOU COMPLETED LAST YEAR. DO NOT SUBMIT STATUS EX TEST CARDS FOR THEM.			
	20-183-3	PLACE VALUE TO FOUR DIGITS AND EXPANDED NOTATION			
		YOUR TEST RESULTS SUGGEST THAT YOU KNOW SOME OF THE OBJECTIVES OF THESE MODULES IN YOUR PROGRAM OF STUDIES. AFTER REVIEWING EACH MODULE CAREFULLY, CONSIDER CHALLENGING IT.			
	20-178-3	SUBTRACTION OF THREE-DIGIT NUMBERS			
	20-179-3	MULTIPLICATION WITH RENOVATING			
		THE FOLLOWING MODULES ARE SUGGESTED FOR YOUR PROGRAM OF STUDIES FOR THIS YEAR:			
	20-178-3	SUBTRACTION OF THREE-DIGIT NUMBERS			
	20-179-3	MULTIPLICATION WITH RENOVATING			
	20-180-3	INTRODUCTION TO DIVISION			
	20-181-3	DIVISION PROCESS			
	20-182-3	POINTS, LINES, AND ANGLES			
	20-183-3	PROPERTIES OF POLYGONS			
	20-184-3	CIRCLES			
	20-185-3	PLAN ACHIEVEMENT TEST			
	20-186-3	PLACE VALUE TO SEVEN DIGITS			
	20-187-3	PROPERTIES OF WHOLE NUMBERS--MULTIPLICATION			
	20-188-3	MULTIPLICATION ALGORITHM			
	20-189-3	DIVISION ALGORITHM			
	20-190-3	PLAN ACHIEVEMENT TEST			
	20-191-3	THE FRACTION SYMBOL			
	20-192-3	FRACTIONS ON A LINE SEGMENT			
	20-193-3	FRACTIONS ON THE NUMBER LINE			
	20-194-3	EQUIVALENT FRACTIONS			
LOCATION CODE	MODULE NUMBER	MODULE NAME	NO OF PERIODS	DAY	DATE
	20-195-3	IMPROPER FRACTIONS			
	20-196-3	PLAN ACHIEVEMENT TEST			
	20-197-3	MEASUREMENT OF LENGTH AND MAP SCALES			
	20-198-3	TIME 2			
	20-199-3	ADDITION AND SUBTRACTION OF FOUR-DIGIT NUMBERS			

FIGURE 7

PLAN		PROGRAM OF STUDIES		0917 LADUCA GINA	
009 IMMACULATE HEART		LEVEL 4 SOCIAL STUDIES FALL 1970			
COMPLETION CODE	MODULE NUMBER	MODULE NAME	NO OF TIMES USED	DATE STARTED	DATE FINISHED
		THE FOLLOWING MODULES ARE SUGGESTED FOR YOUR PROGRAM OF STUDIES FOR THIS YEAR.			
	40-177-3 40-178-3	MAP STUDY--REGIONS OF THE WORLD MAP STUDY--LAND AND WATER			
GROUP	COMMUNITY TYPES	TAKE ANY 2 OF THE FOLLOWING 4 SETS.			
SET 1 47-011	ARCTIC COMMUNITIES	TAKE ALL 2 OF THE FOLLOWING 2 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-011.			
	40-187-3 40-188-3	ARCTIC COMMUNITIES 1 ARCTIC COMMUNITIES 2			
SET 2 47-012	TROPICAL RAIN FOREST COMMUNITIES	TAKE ALL 2 OF THE FOLLOWING 2 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-012.			
	40-189-3 40-191-3	TROPICAL RAIN FOREST COMMUNITIES 1 TROPICAL RAIN FOREST COMMUNITIES 2			
SET 3 47-013	MOUNTAIN COMMUNITIES	TAKE ALL 2 OF THE FOLLOWING 2 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-013.			
	40-192-3 40-194-3	MOUNTAIN COMMUNITIES 1 MOUNTAIN COMMUNITIES 2			
SET 4 47-010	DESERT COMMUNITIES	TAKE ALL 2 OF THE FOLLOWING 2 MODULES. WHEN YOU ARE READY TO BEGIN WORK ON THIS SET, ASK YOUR TEACHER TO START SET NUMBER 47-010.			
	40-194-3 40-195-3	DESERT COMMUNITIES 1 DESERT COMMUNITIES 2			
	40-198-3 40-199-3 40-200-3 40-201-3 40-202-3 40-203-3 40-204-3 40-205-3 40-206-3 40-207-3 40-208-3 40-209-3 40-210-3 40-211-3 40-212-3 40-213-3 40-214-3 40-215-3 40-216-3 40-217-3 40-218-3 40-219-3 40-220-3	COMPARING COMMUNITIES A PLANNED COMMUNITY DEFINING HUMAN PROBLEMS SEARCHING FOR INFORMATION ATTACK A PROBLEM--NATURAL RESOURCES YOUR STATE USING MAPS LEGENDS AND SYMBOLS PLAN ACHIEVEMENT TEST			

FIGURE 8

PLAN		PROGRAM OF STUDIES		5200 EDWARDS BYRON	
003 IMPACULATE HEART		ENGL & LANGUAGE ARTS		FALL 1970	
COMPLETION CODE	MODULE NUMBER	MODULE NAME	NO OF WEEKS	DATE STARTED	DATE FINISHED
		THE FOLLOWING MODULES ARE SUGGESTED FOR YOUR PROGRAM OF STUDIES FOR THIS YEAR:			
	00-301	PLAN ORIENTATION			
	00-302	PLAN PROGRAM OF STUDIES			
	11-304-1	PEELER AND LEGGERS			
	10-374	INDEPENDENT READING--ANIMALS			
	11-307-3	FACTUAL INFORMATION, SUPPLIES			
	10-307	INDEPENDENT READING--ADVENTURE			
	11-308-2	UNCOMMON WORDS, CLASSIFICATION OF LITERATURE			
	10-308	INDEPENDENT READING--SPACE			
	11-309-3	FACT OR FICTION, MAIN IDEAS			
	10-312	INDEPENDENT READING--MURDER			
	11-311-3	FACT AND OPINION, SHORT NOVEL REPORT			
	10-310	INDEPENDENT READING--SCIENCE FICTION			
	11-312-3	SUMMARIZING, SYNONYMS AND ANTONYMS			
	10-314	INDEPENDENT READING--BIOGRAPHY			
	11-313-3	CHARACTERIZATION, WORD MEANING, ORAL READING			
	10-315	INDEPENDENT READING--HISTORICAL FICTION			
	11-314-2	WRITING, FACTUAL INFORMATION			
	10-311-2	QUESTION TRANSFORMATION			
	10-312-2	DERIVATIONAL SUPPLIES			
	10-313-2	ADVERBIAL--NEGATIVE TRANSFORMATION			
	11-315-3	MAIN IDEA AND SUPPORTING DETAILS, AUTHOR'S USE OF WORDS			
SET	17-047	REFERENCE			
		TAKE ANY 1 OF THE FOLLOWING 3 MODULES, WHEN YOU ARE READY TO BEGIN WORK ON THIS SET; ASK YOUR TEACHER TO START SET NUMBER 17-047.			
	10-321-1	THE WRITING OF POETRY			
	10-322-1	READING THE NEWSPAPER			
	11-319-2	REASONING, DRAWING CONCLUSIONS AND CHARACTERIZATION			
	11-321-2	REFERENCE SKILLS			
	10-320	PLAN ACHIEVEMENT TEST			
	11-322-2	NOTES TAKING, OUTLINING AND REPORT WRITING			
SET	17-048	ANALYSIS			
		TAKE ANY 3 OF THE FOLLOWING 3 MODULES, WHEN YOU ARE READY TO BEGIN WORK ON THIS SET; ASK YOUR TEACHER TO START SET NUMBER 17-048.			
	11-323-2	MYSTERY STORIES 1--THE MYSTERY OF SCHOOLMASTER			
	11-317-2	CRITICAL READING, ANALYZING A PLAY			
	11-318-2	POETRY--IMAGES, SOUND, AND WORDS			
SET	17-049	PLAYS			
		TAKE ANY 1 OF THE FOLLOWING 3 MODULES, WHEN YOU ARE READY TO BEGIN WORK ON THIS SET; ASK YOUR TEACHER TO START SET NUMBER 17-049.			
	10-322-2	PLAYS			
	10-323-1	STREETS AND STAGES			
	11-324-2	RELATIVE CLAUSE TRANSFORMATION			
	10-321-1	TRANSITIVE AND INTRANSITIVE--PASSIVE TRANSFORMATION			
	10-322-2	HEADWORD--DERIVED SUPPLIES AND PREFIXES			
	10-323	PLAN ACHIEVEMENT TEST			
	10-325-3	ADVERTISING			
SET	17-049	IMAGE			
		TAKE ANY 3 OF THE FOLLOWING 3 MODULES, WHEN YOU ARE READY TO BEGIN WORK ON THIS SET; ASK YOUR TEACHER TO START SET NUMBER 17-049.			
	10-378-2	WORDS			
	10-340-2	PARAGRAPHS			
	10-340-2	COMMUNICATION HANDUPS			
	10-347-2	MAKING IT STRANGE			
	10-377-2	STRANGE IMAGES			